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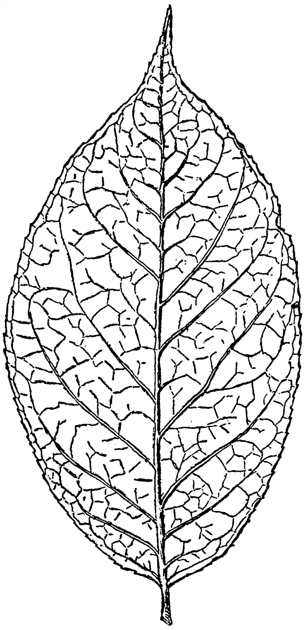
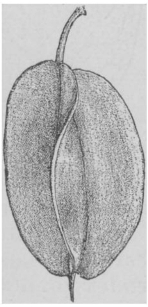
exactly alike as the twelve or eighteen specimens examined in this way indicated. Mr. Meehan stated that he had, in his *Flowers and Ferns of the United States*, series ii, vol. ii, p. 95, noted the existence of a similar thready attachment at the base of *Epiphegus Virginiana*, evidently connecting the plant with a foster-parent in early life—a fact since confirmed by Mr. Fergus, of West Chester, Pa.; and a fuller examination of these cases might afford the clue to all.

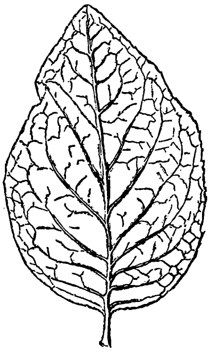
Variation in Halesia.—Mr. MEEHAN exhibited dry leaves and fruit of *Halesia diptera*, *H. tetraptera*, and of a remarkable departure raised from the last-named species some years ago. This appeared in a bed of seedlings all raised from seed gathered from one tree growing in a garden in Germantown. It attracted attention when one year old by the leaves bearing a resemblance to those of an apple-tree. The parent tree had leaves narrowly lanceolate and acuminate, rather thin, pale green on the upper surface, and with no particularly prominent veins. The plant in question had broadly ovate leaves, scarcely pointed, very dark green and rugose on the upper surface, and strongly veined and hirsute below. It was planted to see what it would come to.


1. *H. tetraptera.*

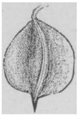

1*a*. *H. tetraptera.*

The flowers were open cup-shaped, instead of being drawn into a narrow tube at the base, as in the parent plant and the pistil was wholly enclosed and not exserted. For several years the plant was sterile, and many good botanists, whose attention was called to it, regarded the plant as a hybrid, and the sterility as a proof thereof. It seemed of no avail to point out that there was no other species with which the parent could have obtained pollen within many miles, nor to show that hybrids were not necessarily sterile. This season the plant produced fruit for the first time, some of which were now exhibited to the Academy. They are very small, not much over a quarter of an inch in diameter, and the four equal wings were comparatively large and of a strongly coriaceous character. The fruit which had been cut open were found to have perfect seeds. If the plant with these leaves, flowers and fruit had been found in a state of nature, the botanist would surely have made a new species of it, if indeed he would not have had some doubts of a new genus.

Mr. Meehan then referred to his contributions in the past, tending to show that there was an innate tendency in plants to vary; that this natural tendency was at the foundation of all theories of evolution, and that environment had not near the influence on variation some good botanists claimed for it. If we were to take environment as a serious element of change, there would be no certainty in the direction of change; but a glance at the palæontological and other evidences showed that change had been always in the direction of certain uniform lines, and evidently in accord with a predetermined plan, which the accidents of environment had not been able to override. At any rate, such illustrations as this of the *Halesia* showed a remarkable change with which certainly environment had nothing to do. The seeds were all from one tree, with not even another individual of its own species near it. The seedlings all came up in one bed together, and yet out of many hundred seedlings, all with the same exact conditions of environment, there was not one with even an approach to the singular peculiarities of this.



2. *H. tetraptera*, var.



2 *a*. *H. tetraptera*, var.

In regard to the sterility or fertility of plants, what we would call environment had evidently much to do, and this also he had endeavored to point out in former botanical contributions. In his paper before the American Association for the Advancement of Science, at Detroit, in 1875, he had shown that Mr. Darwin's experiments in keeping bees from clover, and which in England led to sterility, did not so prove in Philadelphia, the protected plants there being fertile; and he there made the suggestion that the different conditions of environment led to the different results. He had also since then shown that *Linum perenne* in Philadelphia was self-fertile, though in England Mr. Darwin had found that one might as well apply so much inorganic dust to a pistil as the flower's own pollen. Here we have another illustration. The exuberance of vegetative growth being checked by age, or some other circumstance of climate or season, acting against the vegetative and in favor of the reproductive principles—principles we know by many illustrations were antagonistic—gave us this season an environment for the first time favorable to fertility.

The figures are two-thirds the actual size.

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